

REMARKS

Claims 1-19 are pending in the present application. Claim 1 is amended above. No new matter is added by the claim amendments. Entry is respectfully requested.

The Applicants note that the Office Action Summary does not indicate whether the drawings filed in the application are acceptable. Confirmation of their acceptability is respectfully requested.

The Applicants note, with appreciation, that the Office Action indicates at page 4, paragraph 4, that claims 10-19 are allowed.

Claims 1-9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Pradeep, *et al.* (U.S. Patent Number 6,821,904). Reconsideration of the rejection and allowance of claims 1-9 are respectfully requested.

In the present invention as claimed in independent claim 1, a method of manufacturing a multi-thickness gate dielectric layer of a semiconductor device includes “forming a first dielectric layer on a semiconductor substrate”, “forming a second dielectric layer on the top surface of the first dielectric layer, the second dielectric layer having a different dielectric material from that of the first dielectric layer”, and further “selectively removing a portion of the second dielectric layer with etch selectivity to the first dielectric so as to selectively expose a portion of the top surface of the first dielectric layer under the second dielectric layer”.

As mentioned in Amendment A, filed by the Applicants on August 10, 2005, Pradeep, *et al.* is cited in the Office Action as disclosing a method for forming a device having multiple-thickness gate dielectric layers. In Pradeep, *et al.*, a single thick layer 18 of gate oxide is formed on a substrate 10. A photoresist mask 20 is formed over a portion of the surface of layer 18 in order to reduce the thickness of the layer 18 in a region of the device where a thin layer of gate oxide is desired, creating two regions with different thicknesses in layer 18. The thin region of

layer 18 is thus formed as a result of an etching process, and the resulting thickness of the thin region of layer 18 is determined according to the degree of etch (see Pradeep, *et al.* column 4, lines 8-26).

Pradeep, *et al.* fails to teach or suggest “forming a second dielectric layer on a top surface of” a “first dielectric layer”, as claimed in claim 1 of the present invention. Instead, in Pradeep, *et al.*, a single dielectric layer 18 is applied, and a portion of it is etched in one region to form two regions having different thicknesses, thus no “second dielectric layer” is formed on the top surface of the single dielectric layer 18. Pradeep, *et al.* further fails to teach or suggest “selectively removing a portion of the second dielectric layer with etch selectivity to the first dielectric layer so as to selectively expose a portion of the top surface of the first dielectric layer under the second dielectric layer”, as claimed in claim 1 of the present invention. In Pradeep, *et al.*, the thin and thick regions of the dielectric layer 18 are formed of a single layer, thus etching of the dielectric layer merely etches a portion of the same dielectric layer 18. Therefore, when the thin portion is formed by etching in Pradeep, *et al.*, it does not expose a “top surface” of the “first dielectric layer”, as claimed in claim 1 of the present invention. Pradeep, *et al.* further fails to teach or suggest forming a “thick portion” of a dielectric layer that is formed of the first dielectric layer and the remaining second dielectric layer and forming a “thin portion” that is formed of the exposed first dielectric layer. In Pradeep, *et al.*, the thick region is formed of a single dielectric layer that was not subject to the etching procedure.

With reference to comments made in the Office Action of September 14, 2005, at paragraph 3, while different types of dielectric layers can be used for forming a gate dielectric, Pradeep, *et al.* at paragraph 4, lines 17-21, merely lists a number of different options of materials that can be used to form a single gate dielectric layer. There is no teaching or suggestion in Pradeep, *et al.* that multiple first and second dielectric layers, each layer being of a different dielectric material, can be applied to the substrate in the manner claimed in claim 1 of the present invention. Applicant respectfully submits that hindsight analysis was improperly relied upon in reaching the conclusion in the Office Action that the use of multiple dielectric layers in the

present invention of claim 1 is nothing more than an extension of Pradeep's listing of alternative dielectric layers that could serve as the single Pradeep, *et al.* dielectric layer. Further, in Pradeep, *et al.*, the thickness of the thin region is based on the time of the etch (see Pradeep, *et al.*, column 4, lines 35-37), which is unpredictable and variable. In the present invention as claimed in claim 1, the thickness of the resulting "thin portion" is based on the initial thickness of the first dielectric layer, which controls the depth to which the etch of the second dielectric layer advances. Thus, the present invention of claim 1 results in a region that has a more reliable, accurate, uniform and predictable thickness. The uniformity of the dielectric thickness becomes an important factor when the wafer size is large, since it is more difficult to manufacture a large wafer with a uniform dielectric thickness.

It is therefore submitted that independent claim 1 is allowable over Pradeep, *et al.* Reconsideration of the rejection of claim 1 under 35 U.S.C. 103(a) as being unpatentable over Pradeep, *et al.*, and allowance of the claim, are respectfully requested. With regard to the rejection of dependent claims 2-9 as being unpatentable over Pradeep, *et al.*, it follows that these claims should inherit the allowability of the independent claim from which they depend.

Closing Remarks

It is submitted, assuming entry of the present Amendment, that all claims are in condition for allowance, and such allowance is respectfully requested. If prosecution of the application can be expedited by a telephone conference, the Examiner is invited to call the undersigned at the number given below.

Respectfully submitted,

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